

TECHNICAL SUPPORT DOCUMENT (TSD)

June, 2016

I. GENERAL COMMENTS:

A. Company Information

Physical Address:

Raytheon Company Missile Systems
1151 East Hermans Road,
Tucson, Arizona 85756

Mailing Address:

Raytheon Company Missile Systems
PO Box 11337, Mail Stop 826
Tucson, AZ 85734-1337

B. Background

This facility previously operated under a one-year air quality permit first issued in 1993. Since conception the facility has operated as a manufacturer of missiles. The affected sources at the facility to which the air quality permit applies are identified in the following emission categories:

- Category A, NSPS for Stationary Compression Ignition Internal Combustion Engines (40 CFR Part 60 Subpart IIII) - Emergency Non Fire Pump Engines.
- Category B. NSPS for Stationary Compression Ignition Internal Combustion Engines (40 CFR Part 60 Subpart IIII) – Emergency Fire Pump Engines
- Category C NSPS for Stationary Spark Ignition Internal Combustion Engines (40 CFR Part 60 Subpart JJJJ)
- Category D: Specific Conditions for NESHAP (40 CFR Part 63, Subpart ZZZZ) Reciprocating Internal Combustion Engines (Located at Area Sources of HAP, Constructed Before June 12, 2006).
- Category E Specific Conditions for Material Issues. Applies to all Hazardous Air Pollutant and Volatile Organic Compound containing chemical purchases made at the facility.
- Category F Facility Wide Specific Conditions. Other Facility Equipment Fossil Fuel Fired Equipment. Applies to the non NSPS boilers and generators at the facility.

Historical records indicate that Raytheon Company Missile Systems (RMS) - formally known as Hughes Missile Systems Company - has not had any major air quality violations. Past minor enforcement actions worth noting are presented in III.A of this TSD.

This technical support document is a review of the permit renewal application dated October, 2013. The application sought to reclassify the source to a true minor for HAPs. Six years of actual and potential data has been provided to support the request.

C. Attainment Classification

The facility is located in an area that is in attainment for all pollutants.

II. SOURCE DESCRIPTION:

A. Process Description

RMS designs, develops and assembles defense systems. Two significant process related activities produce air emissions, namely, plant-wide chemical purchases and fuel fired equipment.

RMS operates as a true minor source for nitrogen oxide (NO_x) and for all other pollutants.

B. Air Pollution Control Equipment

The following types of air pollution control equipment are used at RMS:

- Paint Booth Filters

All confined paint spraying operations are equipped with filter systems rated for the control of ≥96% overspray. This level of control is required at a minimum pursuant to Pima County Code (PCC) 17.16.400.C.1.

- Low NO_x Burners

One 5.58 MMBtu Trane Direct Fired Absorption Chiller (model ABS-M7A, serial L96L08808) is equipped with a direct fired burner rated <30ppm NO_x. This air pollution control device is an integral part of the emission unit and is thus not required to be written into the permit as a specific condition to ensure compliance with the facility wide emission rate. Modifications or new equipment installations (including, but not limited to, usage of fuels not specified within the permit) that increase emissions to or above the emission limits shall require a significant permit revision.

- Dust Collectors

Dust collectors are connected to particulate generating operations (e.g., abrasive blasting, wood working, surface grinding, etc) and are equipped with dry filter systems.

A canopy-type hood is readily available on all equipment to capture fume emissions from the facility operations. All emissions collected in this manner are directed to each assigned process baghouse.

III. REGULATORY HISTORY

A. Testing & Inspections

The facility has been permitted since 1993 and has undergone regular inspections to date. Past minor enforcement actions worth noting are:

May 2000:

- Failure to limit the hours of operation of a fuel fired generator to 500 hours per rolling 12 month period as specified in the permit;

[This enforcement action was adequately resolved and subsequently closed in June 2000.]

March 2001:

- Failure to submit written notification for start-up of a new diesel generator;
- Failure to submit written notification for the addition of a dual-spindle filament winder in building #815; and
- Failure to record and maintain records of the natural gas usage of the NSPS affected boiler according to 40 CFR 60.48c (g);

[These enforcement actions were adequately resolved and subsequently closed in July 2001.

October 2005:

- Failure to limit the hours of operation of a fuel fired generator to 500 hours per rolling 12 month period as specified in the permit;

[This enforcement action was adequately resolved and subsequently closed in December 2005.

The source is currently in compliance with their permit conditions.

B. Excess Emissions

The facility has submitted no reports of excess emissions.

IV. EMISSIONS ESTIMATES

The following emission rates are for reference purposes only and are not intended to be enforced by direct measurement unless otherwise noted in the Specific Conditions of the permit.

Pollutant	Potential Emissions (Tons per Year)
Nitrogen Oxides (NO _x)	21
Carbon Monoxide (CO)	*10
Volatile Organic Compounds (VOC)	**63
Particulate Matter (as PM ₁₀)	*<2
Sulfur Oxides (SO _x)	*<1
Hazardous Air Pollutants (HAPs – individual)	<5
Hazardous Air Pollutants (HAPs – total)	<5

* RMS predominantly generates the potential emissions of NO_x, CO, PM₁₀, and SO_x solely from the combustion of fossil fuels. The newer federal regulations associated to internal combustion engines limit the maintenance and non-emergency use to 100 hours in any 12 month period. The regulation effectively eliminates the need for synthetic minor limitations on these regulated air pollutants. Potential emissions of NO_x, CO, and SO_x will remain below 90 tons per year. The emission factors used to determine the potential to emit are taken from EPA, AP-42, Volume I, Fifth Edition.

** Potential emissions of VOC and combined HAPs are calculated using current hourly operations multiplied by a factor of 1.73 to represent 8760 operating hours per year. Actual (2011) emissions of VOC and combined HAPs based on current hourly operations are 38.19 TPY and 4.00 TPY respectively.

V. APPLICABLE REQUIREMENTS

Code of Federal regulations (CFR):

40 CFR Subpart Dc	Standards of Performance for Small Industrial Commercial-Institutional Steam Generating Units
40 CFR Subpart IIII	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
40 CFR Subpart JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines
40 CFR Subpart ZZZZ	Standards of Performance for Stationary Reciprocation Internal Combustion Engines.

Environment Protection Agency: Compliance Assistance, Clean Air Act Applicability Determination Index:

Determination Detail Control Number 0300118

Pima County Code (PCC) Title 17, Chapters:

17.16.040	Standards and Applicability (Includes NESHAP)
17.16.130	Applicability
17.16.165	Standards of Performance for Fossil-Fuel Fired Industrial and Commercial Equipment
17.16.340	Standards of Performance for Stationary Rotating Machinery
17.16.400	Organic Solvents and Other Organic Materials
17.20.010	Source Sampling, Monitoring, and Testing

VI. PERMIT CONTENTS

Category A: Specific Conditions for NSPS (Subpart IIII) Compression Ignition Internal Combustion Engines (Non-Fire Pump Engines)

The regulations identified within this category apply to stationary compression ignition internal combustion engines (CI ICE) identified in Table 2, Attachment 2 of the permit.

Standard	Discussion	Authority
I.	Applicability. The provisions of this NSPS subpart IIII apply to three distinct types of engines at the RMS facility; The engine types are identified in I.1, I.2.a and I.2.b.	40 CFR: 60.4200(a)(1)(i), 60.4200(a)(2)(i), and 60.4200(a)(3)
II.A	Operational limitations that specify the emission standards for each subject stationary CI ICE, identified in Table 2 through Table 3, Attachment 2 of the permit. These emission standards are derived directly from subpart IIII.	40 CFR: 60.4205(a) and (b)
II.B	Operational condition ensuring that the Permittee operates and maintains the applicable NSPS CI ICE according to manufacturer's written instructions over the entire life of the engine. Restriction preventing the Permittee from altering the settings on the CI ICE that are not permitted by the manufacturer.	40 CFR: 60.4206, and 60.4211(a)

Standard	Discussion	Authority
II.C.1	Fuel requirements for diesel fired CI ICE engines are provided in subpart IIII to limit the sulfur content in the fuel.	40 CFR: 60.4207(b), 80.510(b), and 60.4207(c)
II.C.2	RMS is provided an opportunity to use remaining non-compliant fuel that does not meet the fuel requirements of subpart IIII for the purpose of using up existing fuel inventories.	40 CFR 60.4207(c)
II.D	Installations restrictions - graduated prohibitions by year from the installation of units that do not meet the applicable standards with certain allowances for certain categories of equipment.	40 CFR 60.4208
II.E	Emergency designation – limitations and provisions affecting the operation of emergency equipment.	40 CFR 60.4211(e)
II.F	Compliance requirements – limitations and provisions affecting the operation of emergency equipment.	40 CFR 60.4211
III	Monitoring requirements – Non Required	PCC 17.12.185.A.3
IV.A	Applicable federal recordkeeping requirement identified in subpart IIII. Recordkeeping – RMS is provided numerous optional methods for demonstrating compliance with the applicable emission standard.	40 CFR 60.4211(b)
IV.B	Recordkeeping – hourly operational recordkeeping requirement to demonstrate compliance with the 100 hrs/yr checks and readiness testing of applicable NSPS such units. Additional federal requirement to keep operational hour records in emergency and non-emergency service.	PCC 17.12.185.A.4 40 CFR 60.4214(b)
IV.C	Requirement to maintain records of manufacturer certifications that identify the emission limits for each applicable engine.	PCC 17.12.185.A.4
IV.D	Requirement to maintain records that verify compliance with the federally enforceable diesel fuel requirements.	PCC 17.12.185.A.4
IV.E	Requirement to maintain records of NO _x emissions from the CI ICE to determine compliance with the facility wide emission limits	PCC 17.12.185.A.4
IV.F	Recordkeeping requirement to maintain records for five years.	PCC 17.12.185.A.4
V.	Applicable federal reporting requirement identified in subpart IIII. Requirement to report any excess emissions in excess of the limits to the Control Officer.	40 CFR 60.4214 (a)(1) and PCC 17.12.185.A.5
VI.	Applicable federal reporting requirement identified in subpart IIII. Requirement to conduct any performance test in accordance with 40 CFR 60.4212.	40 CFR 60.4212 And PCC 17.12.185.A.3.a
VII	Applicable federal general provisions for all sources subject to subpart IIII.	40 CFR 60.4218 and 40 CFR 60.4214(b)]

Category B: Specific Conditions for NSPS (Subpart IIII) Compression Ignition Internal Combustion Engines (Fire Pump Engines)

The regulations identified within this category apply to stationary compression ignition internal combustion engines (CI ICE) identified in Table 2, Attachment 2 of the permit.

Standard	Discussion	Authority
I.	Applicability – The provisions of the NSPS subpart IIII applies to two fire pump engines.	40 CFR 60.4200(a)(2)(ii)
II.A.1&2	Applicable operational limitations requiring the units to be certified by the manufacturer at or below the applicable emission standards.	40 CFR 60.4203, 4205(c)
II.B.	Fuel requirements for diesel fired CI ICE engines are provided in subpart IIII to limit the sulfur content in the fuel.	40 CFR 60.4207(b) & 80.510(b)
II.C	Emergency designation – limitations and provisions affecting the operation of emergency equipment.	40 CFR 60.4211(f)
II.D	Compliance requirements – limitations and provisions affecting the operation of the fire pump engines.	40 CFR 60.4211(b) & Table 3 of Subpart IIII
III	Monitoring requirements – installation of a non-resettable hour meter on the fire pump engines	PCC 17.12.185.A.3.d
IV.A.	Operational hour record keeping requirement	PCC 17.12.185.A.4
IV.B	Fuel requirements for diesel fired CI ICE engines are provided in subpart IIII to limit the sulfur content in the fuel.	40 CFR 60.4207
V	Applicable general provision of the 40 CFR rule.	40 CFR 60.4218 & 40 CFR 60.4214(b)
VII	Records required by, or generated to verify compliance with the NSPS IIII rule are required to be maintained for five years.	PCC 17.12.185.A.4

Category C: Specific Conditions for NSPS (Subpart JJJJ) Spark Ignition Internal Combustion Engines

The regulations identified within this category apply to spark ignition internal combustion engines (SI ICE) identified in Table 4, Attachment 2 of the permit.

Standard	Discussion	Authority
I.	Applicability. The provisions of this NSPS subpart JJJJ apply to SI ICE engines manufactured after January 1, 2009, for emergency engines with a maximum engine power greater than 25 HP.	40 CFR 60.4230(a)(4)(iv)
II.A	Applicable federal operational limitation requirements for owners and operators of SI ICE.	40 CFR 4233
II.A.1	Applicable federal emission standards for NO _x , CO and VOC based on engine type, fuel type and manufacturing date.	40 CFR 60.4233(d) and 40 CFR 60.4233(e)
II.A.2	The opacity standard is a local regulation applicable to permitted and unpermitted sources operating within Pima County. The opacity standard states that the applicable NSPS SI ICE may not discharge gases with more than 20 percent opacity.	PCC 17.16.040.A
II.B	Applicable federal operational condition to maintain applicable SI ICE emission standards over the entire life of the engine.	40 CFR 4234

Standard	Discussion	Authority
II.C	Local fuel limitation requirement identifying the specified fuel allowed to be combusted in each SI ICE.	PCC 17.12.185.A.2
II.D	Applicable federal requirements prohibiting installation of non-compliant SI ICE.	40 CFR 60.4236
II.E	<p>Applicable federal compliance requirements for owners and operators that purchase manufacturer-certified engines. Requirements include: recordkeeping of conducted maintenance, limitation on the operational hours for checks and readiness testing.</p> <p>Owners and operators that purchase engines that have never been certified are required to conduct an initial performance test to demonstrate compliance.</p> <p>Requirement to use air-to-fuel ratio (AFR) controllers with the operation of three-way catalysts/non-selective catalytic reduction. The AFR controller must be maintained and operated appropriately in order to ensure proper operation of the engine and control device to minimize emissions at all times.</p>	<p>40 CFR 60.4243 40 CFR 60.4243(b)(1) 40 CFR 60.4243(a)(1) 40 CFR 60.4243(a)(2) 40 CFR 60.4243(a)(2)(i) 40 CFR 60.4243(a)(2)(ii) 40 CFR 60.4243(a)(2)(iii) 40 CFR 60.4243(b)(2) and 40 CFR 60.4243(b)(2)(i) 40 CFR 60.4243(d) 40 CFR 60.4243(e) and 40 CFR 60.4233 40 CFR 60.4243(f) 40 CFR 60.4243(g)</p>
III.A	<p>PDEQ has determined that the percent of opacity of visible emissions from the stationary SI ICE while combusting natural gas fuel is inherently low thus the Permittee is not required to show a demonstration of compliance with the standard for opacity.</p> <p>The Permittee shall however operate and maintain the stationary SI ICE at all times - including periods of startup, shutdown, and malfunction - in a manner consistent with good air pollution control practices and consistent with manufacturer's guidelines.</p>	PCC 17.12.185.A.3
III.B	The Permittee has been provided an option to demonstrate compliance with the local fuel limitation condition by either physically showing that only commercially available pipeline quality natural gas was fired in the stationary SI ICE listed, or making available to the Control Officer for his inspection, documentation, such as invoices or statements from the fuel supplier, showing that only commercial natural gas was purchased for use in the equipment.	PCC 17.12.185.A.3
IV.A	Applicable federal notifications, reports and recordkeeping requirements to comply with subpart JJJJ.	<p>40 CFR 60.4245(a) 40 CFR 60.4245(a)(2) 40 CFR 60.4245(a)(3) 40 CFR 60.4245(a)(4) and 40 CFR 60.4243(a)(2)</p>
IV.B	Requirement to maintain records of NO _x emissions from the SI ICE to determine compliance with the facility wide emission limits	PCC 17.12.185.A.4
V.	Applicable federal requirement for the Permittee to submit a copy of each performance test conducted on all subject SI ICE.	40 CFR 60.4245(d)

Standard	Discussion	Authority
VI.A	Allowance for the Permittee to implement equipment changes and/or site relocation of equipment provided that the NO _x synthetic minor limitation is not exceeded and the proposed equipment changes do not trigger the applicability of a federally enforceable condition.	PCC 17.12.185.A.2
VI.B	Condition identifying the need for the Permittee to submit a significant revision for any planned increases in NO _x emissions above the emission limits.	PCC 7.12.160.B
VI.C	Condition requiring the Permittee to submit the proper notification and follow the required permit revision procedures identified in PCC.	PCC 17.12.240, PCC 17.12.255.B and PCC 17.12.260
VII	Approved local and federal test methods and procedures for the purpose of establishing whether or not the facility has violated or is in violation of any provision of this permit.	PCC 17.20.010
VII.A	Visible emissions observations shall be performed in accordance to EPA Reference Method 9.	PCC 17.16.130.B
VII.B	The requirement limiting the sulfur content in fuel used in the SI ICE shall not be required to be determined if the Permittee demonstrates that pipeline quality gas was the only fuel fired in the SI ICE. Pipeline quality natural gas is a fuel regulated by the Federal Energy Regulatory Commission which inadvertently limits the sulfur content below the applicable sulfur content limitation in PCC.	PCC 17.12.185.A.3 and PCC 17.20.010
VII.C	Allowance for the use of alternative test methods following approval from the Control Officer	PCC 17.12.045.D
VII.E	Applicable federal performance testing procedures identified in subpart JJJJ.	40 CFR 60.4244
VIII	Applicable additional federal requirement for all regulated emission units subject to subpart JJJJ.	40 CFR 60.4246

Category D: Specific Conditions for NESHAP (Subpart ZZZZ) Reciprocating Internal Combustion Engines (For Emergency Spark and Compression Ignition Engines)

The regulations identified within this category apply to compression ignition and spark ignition reciprocating internal combustion engines (RICE) identified in Table 5, 6 and 7, Attachment 2 of the permit.

Standard	Discussion	Authority
I	<p>Applicability – This rule became effective on October 19, 2010, and includes requirements to regulate emissions from new and reconstructed stationary reciprocating internal combustion engines (RICE) at area sources.</p> <p>Owners/operators have several options to demonstrate compliance with the final rule. For the most part, owners/operators will purchase an engine certified for stationary use by the manufacturer.</p> <p>The final rule requires owners/operators of certified engines to follow emission-related maintenance of the engine according to the manufacturer’s instructions. If a non-certified engine is purchased, then the owners or operators will be required to develop and follow a maintenance plan and perform emission testing to demonstrate compliance.</p>	40 CFR 63.6585
II	Compliance Dates – A timeframe provided for owners, operators and manufacturers to comply with the final rule.	40 CFR 63.6595(a)
III	Emission and Operating Limitations – The applicable stationary RICE are not subject to the following: numerical emission standards, initial compliance, operating limitations, fuel requirements and performance testing requirements of Subpart ZZZZ. The permit is structured so it follows the numerical subsections of the Subpart ZZZZ. This allows for a methodical approach to determine the applicable regulations.	CFR 63.6603(a) 40 CFR Subpart ZZZZ, Table 2d & Table 2b
IV.A	Monitoring, Installation, Collection, Operation and Maintenance Requirements – This subsection provides the requirements for demonstrating compliance under Subpart ZZZZ. For each emergency stationary CI/SI RICE, the Permittee is required to follow a specific annual maintenance requirement.	40 CFR Subpart ZZZZ : Table 2d
IV.B	Minimizing Emissions – Provided to ensure that the Permittee operates and maintains any applicable unit in a manner consistent with manufacturer’s emission-related written instructions or to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.	40 CFR 63.6625(e)
IV.C	Non-Resettable Hour Meter – Provided to ensure that the Permittee operates all existing emergency stationary RICE within the allowable operational hours for maintenance checks, readiness testing and non-emergency situations.	40 CFR 63.6625(f)
IV.D	Engine Idle and Startup Time Minimization – Provided to ensure that the Permittee operates all existing emergency stationary RICE consistent with good air pollution control practice for minimizing emissions.	40 CFR 60.6625(h) & Table 2d to Subpart ZZZZ of Part 63

Standard	Discussion	Authority
IV.E	Alternate Oil Change Requirement – Provided to allow the Permittee flexibility to demonstrate compliance with oil change frequency requirement by adopting a oil analysis program.	40 CFR 60.6625(j)
V.A	Continuous Compliance Requirements – This subsection provides the requirements for demonstrating compliance under Subpart ZZZZ at all times and in a manner consistent with safety and good air pollution control practices for minimizing emissions	40 CFR 63.6605(a) and (b)
V.B	Demonstration of Continuous Compliance with the emission limitations and operating limitations – Specific monitoring and testing methods are provided to demonstrate compliance with the established emissions limitations	40 CFR 63.6640
V.C	Requirements for Emergency Stationary Engines – Provided to ensure the Permittee operates all existing emergency stationary RICE within the allowable operational hours for maintenance checks, readiness testing and non-emergency situations.	40 CFR 63.6640(f)
VI	Recordkeeping – This section details the record retention requirements that are required under Subpart ZZZZ. Records of notifications, malfunctions, performance tests and maintenance are specified to be retained. Allowance has been provided to allow records to be kept off-site at a central location.	40 CFR 63.6655
VII	Reporting Requirements – Provided to allow the Permittee additional time to demonstrate compliance with the management practice requirements where it is not possible to shut down the RICE in a emergency situation.	Footnote 2 of Table 2 to Subpart ZZZZ of Part 63.

Category E: Specific Conditions for Material Issues

The regulations identified within this category apply to all chemical purchases made by RMS for process related activities.

Standard	Discussion	Authority
I	<p>Emission Limitations and Standards – The specific conditions identified within this category are based on potential emissions from facility processes which have the capacity to emit regulated air pollutants, specifically volatile organic compounds (VOC) and hazardous air pollutants (HAPs). These processes include fuel fired equipment and material issues.</p> <p>The limitations in the permit were established through discussions between PDEQ and EPA Region IX to allow RMS avoid the applicability of the Aerospace NESHAP MACT. Historical operations (years 2006 through 2011) indicate actual and potential to emit data for individual and total combined HAPs have not exceeded federal thresholds that would trigger MACT or Title V applicability; consequently the source has always been and will therefore be reclassified as a true minor source for HAPs.</p>	PCC 17.12.190.B.2
II.A	Monitoring Provisions – The Permittee demonstrates compliance with the HAP emission limitations by maintaining a monthly HAP emissions report (MHAPER) at all times. This report will evaluate all HAP containing materials purchased at the RMS facility, all HAPS emitted from the fuel fired equipment combustion and all activities defined as trivial per PCC.	PCC 17.12.185.A.3 PCC 17.04.340.A

Standard	Discussion	Authority
II.B	Monitoring Provisions – The Permittee demonstrates compliance with the VOC emission limitations by maintaining a monthly VOC emissions report (MVO CER) at all times. This report will evaluate all VOC containing materials purchased at the RMS facility, all VOC emitted from the fuel fired equipment combustion and all activities defined as trivial per PCC.	PCC 17.12.185.A.3
II.C	Organic Solvents and Other Organic Materials – These local PCC conditions are established to promote pollution control practices for minimizing emissions.	PCC 17.16.400.A
III.	Recordkeeping Requirements – Requirement to maintain records that verify compliance with the emission limitations. Records are required to be maintained for five years.	PCC 17.12.185.A.4
IV.	Reporting Requirements – The Permittee is subject to the general reporting requirements in the additional permit conditions section of the permit.	
V.	Facility Changes – RMS is provided flexibility to implement material changes and modifications in equipment throughout the permit term. All changes or modifications are required to be assessed against the permit revision conditions established in PCC. When required, the Permittee is required to submit initial notification and/or seek approval to implement changes that may trigger the applicability of additional emission limitations and standards.	PCC 17.12.240, PCC 17.12.255.B or PCC 17.12.260
VI.	Testing Requirements – The Permittee is provided an avenue to demonstrate compliance with the permit conditions of the permit. RMS may seek approval for the use of alternative test methods to demonstrate compliance with applicable emission limitation standards.	PCC 17.20.010 and PCC 17.12.045.D

Category F: Facility Wide Specific Conditions

The provisions of this Category apply to all other operations and equipment specifically listed in Table 8 of Attachment 2 of the permit (Non-NSPS equipment).

Standard	Discussion	Authority
II.A.1	Opacity Standard - By law, the Permittee cannot allow any equipment under his control to emit effluents (such as exhaust from a generator) that exceed specific values of opacity (the degree to which light cannot pass through the plume of effluent/exhaust.) The value of opacity that cannot be exceeded is stated in the permit for the generator.	PCC 17.16.340.E, PCC 17.16.040
I.A.2	Fuel Limitation - Each type of fuel burned in equipment powered by combustion has a unique blend of constituents. When burned, each fuel results in the release of regulated pollutants to the atmosphere at characteristic levels. This permit is written to account for the fuel specified for the generator (diesel). Use of fuels other than those specified would result in different rates of pollutant emission. Therefore, the Permittee must only burn the designated fuels identified in the permit to remain in compliance with the conditions of this permit.	PCC 17.12.190.B
I.B.1	Opacity Monitoring - The Permittee demonstrates compliance with this regulation by checking the exhaust from the generator under RMS control quarterly, and keeping complete records of these checks.	PCC 17.12.185.A.3, A.4 and A.5

Standard	Discussion	Authority
I.B.2	<p>Fuel Limitation - Local fuel limitation requirement identifying the specified fuel allowed to be combusted in each non-NSPS generator.</p>	
	<p>Fuel Limitation Monitoring - Local fuel limitation requirement identifying the specified fuel allowed to be combusted in each non-NSPS boiler and evaporator. There is also a prohibition from firing high sulfur fuel. This requirement is the basis for not requiring measures to show compliance with PCC 17.16.340.F and PCC 17.16.340.J (see below)</p>	
	<p>Compliance with the fuel limitation requirement of PCC 17.16.340.H shall ensure compliance with the Sulfur Dioxide Standard of PCC 17.16.340.F which limits the emission of SO₂ to 1.0 pound per million BTU heat input, when burning low sulfur fuel. The definition of low sulfur fuel (PCC 17.04.340.A. "Low Sulfur Fuel") is fuel oil containing less than 0.9 percent sulfur by weight. AP-42 Appendix A, page A-5 states the heating value of diesel fuel is 137,000 BTU per gallon. Thus, 1 million BTU of heat input is equivalent to 7.3 gallons of diesel. At 7.05 lbs per gallon, 51.47 lbs of diesel will produce 1 million BTU. At 0.9% 51.47 lbs of diesel contains 0.46 lbs of sulfur. Combined with Oxygen to form SO₂ and assuming 100% of the sulfur in the fuel forms SO₂ this would yield 0.92 lbs SO₂ per 1MMBtu.¹ Thus, low sulfur fuel oil will produce 0.92 lbs of SO₂ per million BTU of heat input. This is roughly 8% less than the prescribed 1.0 pound SO₂ per million BTU (PCC 17.16.340.F). Likewise, distillate, residual, and other such fuel oils range from 0.84 to 0.94 lbs of SO₂ per million BTU. Thus, it is not necessary to include the standard in the permit explicitly but, by reference in Attachment 1.</p>	<p>PCC 17.12.185.A.2</p> <p>PCC 17.12.190.B PCC 17.16.165.G</p>
	<p>Also, The requirement in PCC 17.16.340.J to report daily periods when the fuel sulfur content of the fuel being fired exceeds 0.8% by weight has not been included in the permit as all fuel that is delivered to Pima County has an enforceable limit of 0.9% by weight. Any fuel over 0.8% but below 0.9% would not be an exceedance of any standard or limitation and so it would be burdensome for sources to report every time the fuel had a sulfur content above 0.8%. An excess emissions report would be submitted should the fuel exceed the 0.9% sulfur content standard. This general permit will not allow the use of high sulfur diesel. Moreover, even though the sulfur content limit is 0.9% by weight, jet fuel, natural gas, gasoline and low sulfur diesel #2 delivered to Pima County consistently shows sulfur levels below this limit as shown in past records of fuel supplier specifications which verify sulfur content of the fuel fired.</p>	<p>PCC 17.12.190.B PCC 17.16.165.G</p>

¹ The atomic weight of SO₂ = 64; the atomic weight of S = 32. SO₂ = (S) x (SO₂/S);
(0.46 lb/MMBtu) x (64/32) = 0.92 lb SO₂

II.	Boilers and Evaporators - The specific conditions identified in section II of this category apply to all non-NSPS boilers and evaporators at the RMS facility.	
II.A	<p>Opacity Standard - By law, the Permittee cannot allow any equipment under his control to emit effluents (such as exhaust from the boiler) that exceed specific values of opacity (the degree to which light cannot pass through the plume of effluent/exhaust.)</p> <p>Internal combustion and external combustion emission units firing natural gas exclusively are inherently compliant with applicable Title 17 opacity standards (20% and above) by design. Monitoring and recordkeeping related to these standards provides no substantial environmental benefit. The opacity standards will be included in permits, but there is no need to include monitoring and recordkeeping requirements related to such natural gas combustion in permits issued by this department. Maintenance requirements incorporated in permits provide sufficient means to assure compliance with opacity standards for such natural gas combustion.</p>	PCC 17.16.040.A
II.B	On site records retention. Standard Pima County Code records retention schedule.	PCC 17.12.185.A.4
III.	Facility Changes - The RMS facility may make a physical change or change in method of operation if the conditions identified for a permit revision are met.	PCC 17.12.240 PCC 17.12.255 PCC 17.12.260
IV	Testing requirements. Opacity – No Requirements	PCC 17.20.010
IV.B	Since the sulfur content of pipeline quality natural gas is regulated by the Federal Energy Regulatory Commission, identifying that pipeline quality natural gas was fired exclusively in the applicable NSPS boiler would suffice to demonstrate compliance with the fuel limitation standard.	PCC 17.12.185.A.3, PCC 17.20.010

Additional Permit Requirements

Standard	Discussion	Authority
I	<p>Compliance with Permit Conditions</p> <p>This section of the permit identifies generic conditions that are applicable to all Class II and Class III sources.</p>	PCC 17.12.185 A.7.a &b, PCC 17.12.185.A.5 17.12.040, 17.12.185.A.9, and, PCC 17.12.510
II	The Permittee and Control Officer are provided means of revising, reopening, or terminating the permit for cause.	PCC 17.12.185.A.7.c
III	<p>Duty to provide information</p> <p>The Permittee is required to furnish records to the Control Officer when requested.</p>	PCC 17.12.165.G & PCC 17.12.185.A.7.e
IV	<p>Severability Clause</p> <p>This generic condition provides an avenue for the permit to be enforceable even if a part of the permit is found to be invalid.</p>	PCC 17.12.185.A.6

VII. Miscellaneous Comments:

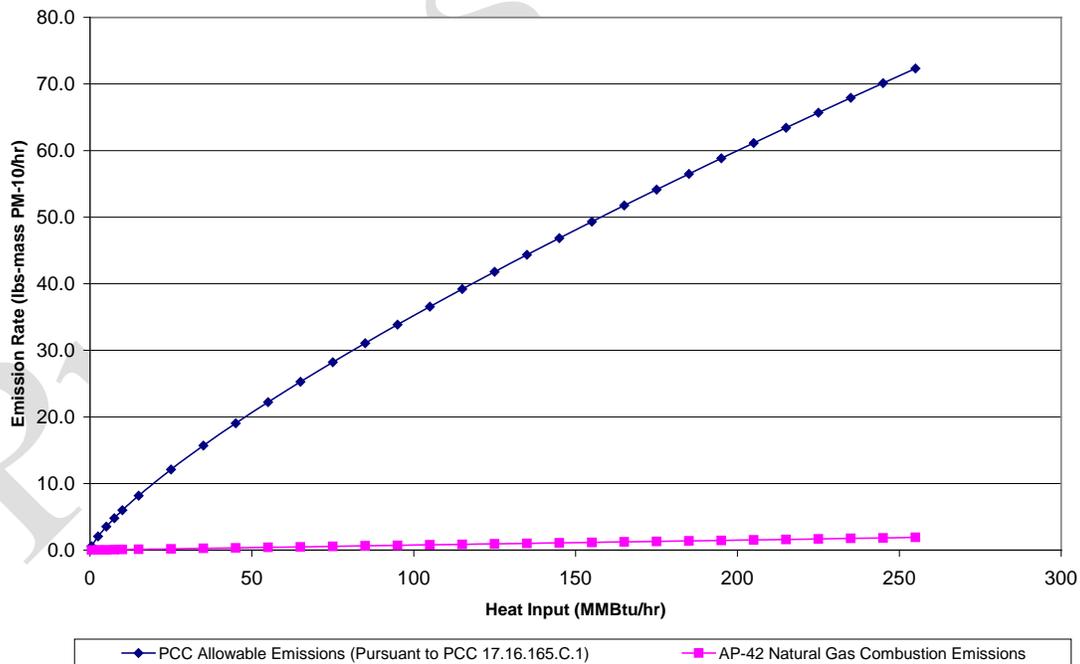
- PCC 17.16.400.C.5 limits the emissions of VOCs from surface coating of miscellaneous metal parts and products. RMS maintains appropriate SDS records to show compliance with the content limits required by this standard. Coating emissions data can be obtained from the MVOCER inventory and for this reason; the requirement of this VOC limiting standard has been omitted from the permit.
- Category C, specific condition II.E.4 of the permit details performance testing requirements for stationary SI internal combustion engines. To clarify, the following definition is provided for identifying a rebuilt SI ICE:

Engine rebuilding means to overhaul an engine or to otherwise perform extensive service on the engine (or on a portion of the engine or engine system). For the purpose of this definition, perform extensive service means to disassemble the engine (or portion of the engine or engine system), inspect and/or replace many of the parts, and reassemble the engine (or portion of the engine or engine system) in such a manner that significantly increases the service life of the resultant engine.

- PCC 17.16.165.C.1 limits the emissions of particulate matter from a fuel burning operation. This rule has not been included in the permit as allowable emissions are well above potential emissions. The Allowable emissions vs. AP-42 emission factor chart illustrates this fact:

AP-42 estimated emissions are demonstrably significantly less than the allowable emissions (at 255 MMBtu/hr input capacity, the allowable emissions rate is 72.3 lb/hr while AP-42 estimates 1.90 lb/hr). Therefore, it is not necessary to include the standard in the permit explicitly but, by reference in Attachment 1.

Comparison of Emissions of PM-10 from the Combustion of Fuel
PCC Allowable vs AP-42 Estimated



- Non Applicable Federal Regulations

40 CFR 63, Subpart MMMM, National Emission Standards for Hazardous Air Pollutants for Surface Coating of Miscellaneous Metal Parts and Products.

This rule does not apply to surface coating or coating operations at installations owned by the US Air Force or of military munitions manufactured for the Armed Forces of the United States including the Coast Guard and the National Guard of any such State. [40 CFR 63.3881(c)(4)].

40 CFR 63, Subpart PPPP, National Emission Standards for Hazardous Air Pollutants for Surface Coating of Plastic Parts and Products.

This rule does not apply to surface coating or coating operations at installations owned by the US Air Force or of military munitions manufactured for the Armed Forces of the United States including the Coast Guard and the National Guard of any such State. [40 CFR 63.4481(c)(3)]

VIII. IMPACTS TO AMBIENT AIR QUALITY

Not a major source thus no studies are required.

IX. CONTROL TECHNOLOGY DETERMINATION

No control technologies needed to be determined; source is not subject to BACT or LAER. This is a facility that designs, develops and assembles defense systems operating as a Class II, true minor source.

XI. PREVIOUS PERMIT CONDITIONS

Not applicable, as no previous permit conditions were developed as part of an installation or pre construction review permit.